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**Before the
Federal Communications Commission
Washington, DC 20554**

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**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY**

In the Matter of)
)
Closed Captioning Requirements for)
Digital Television Receivers)
)

ET Docket No. 99-254

**COMMENTS OF THE
THE NATIONAL ASSOCIATION OF BROADCASTERS**

**NATIONAL ASSOCIATION OF
BROADCASTERS**
1771 N Street, NW
Washington, DC 20036
(202) 429-5430

Henry L. Baumann
Jack N. Goodman
Jerianne Timmerman

Arthur W. Allison III
Kelly T. Williams
NAB Science and Technology

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Executive Summary

The National Association of Broadcasters (“NAB”) submits these comments in response to the *Notice of Proposed Rulemaking* (“*Notice*”) seeking comment on technical proposals for the display of closed captions on digital television (“DTV”) receivers and for the inclusion of closed captioning decoder circuitry in DTV receivers. Specifically, the Commission proposed in the *Notice* to incorporate into its rules Section 9 of EIA-708-A, an industry standard that provides guidelines for the implementation of closed captioning services with DTV technology.

NAB agrees with the Commission that broadcasters should not be obligated to provide the advanced features of EIA-708 captioning, particularly during the transition to DTV. To conclude otherwise would impose undue burdens on broadcasters, especially during the digital transition.

NAB also believes that, for the digital closed captioning system to function properly, DTV receivers and set-top converter boxes (“STBs”) must meet certain technical standards. In particular, NAB urges the Commission to require digital STBs to pass through, unaltered, all of the analog captioning data contained in DTV programs to the devices (*e.g.*, television sets and VCRs) connected to the analog output of the STBs. To ensure that digital captioning works as intended, DTV receivers must also be able to receive and process the data contained in the Program and System Information Protocol (a data stream containing program captioning and program rating (*i.e.*, V-Chip) information that is carried in the DTV signal).

Finally, the Commission must allow a reasonable period of time before the digital captioning rules become effective. Given the very recent adoption of certain industry standards, the continuing process of gaining acceptance for the standards, and the need to construct

equipment consistent with these standards, NAB believes that the proposed one-year period is unrealistic.

**Before the
Federal Communications Commission
Washington, DC 20054**

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Digital Television Receivers)	

TO: The Commission

**COMMENTS OF THE
THE NATIONAL ASSOCIATION OF BROADCASTERS**

The National Association of Broadcasters (“NAB”)¹ submits these comments in response to the Commission’s *Notice of Proposed Rulemaking* in this proceeding.² The *Notice* sought comment on technical proposals for the display of closed captions on digital television (“DTV”) receivers and for the inclusion of closed captioning decoder circuitry in DTV receivers. NAB applauds the Commission’s efforts to ensure access to digital programming for persons with disabilities. In pursuing this goal, however, the Commission should not unduly burden broadcasters during their transition to digital television, and should not impose an unrealistic time frame for the implementation of the new digital closed captioning rules. The Commission must also carefully consider the technical capabilities that DTV receivers and set-top converter boxes should be required to possess.

¹ NAB is a nonprofit incorporated association of radio and television stations and broadcast networks. NAB serves and represents the American broadcasting industry.

² *Notice of Proposed Rulemaking*, FCC 99-180 (rel. July 15, 1999) (“*Notice*”).

I. At Least During The Digital Transition, Broadcasters Should Not Be Required To Provide The Advanced Features Of EIA-708 Captioning.

In November 1998, the Electronic Industries Alliance (“EIA”) adopted EIA-708-A, which provides guidelines for the implementation of closed captioning services with digital television technology.³ The *Notice* in this proceeding specifically proposed (at ¶ 7) to incorporate Section 9 of EIA-708-A into the Commission’s rules. This section contains recommendations for the operation of DTV decoders with respect to closed captioning.⁴

In setting forth its proposal, the Commission specifically noted that broadcasters are not obligated to provide the extensive features of EIA-708. *See Notice* at ¶ 7 n. 13. NAB agrees with the Commission that broadcasters should not be required to provide the advanced features of EIA-708, especially during the transition to DTV.⁵ To conclude otherwise would impose undue burdens on broadcasters during an uncertain period of transition for the broadcast industry.

As the Commission noted, EIA-708 supports the “transport of standard analog captioning information.” *Notice* at ¶ 11.⁶ Thus, digital programming will be closed captioned, even without imposing an additional requirement that broadcasters provide captions having EIA-708 display features. Forcing broadcasters to provide captions with the more advanced display features of

³ In a 1991 order, the Commission had approved rules essentially incorporating EIA-608, an industry standard that described analog closed captioning and other data services transmitted on line 21 of the vertical blanking interval (“VBI”) of the NTSC television signal. *See Report and Order* in GEN Docket No. 91-1, 6 FCC Rcd 2419 (1991).

⁴ As discussed in Section III. below, EIA-708-A has been superseded by EIA-708-B. The Commission should refer to this updated document when considering any proposed rules.

⁵ These “advanced” features include, for example, more user options with regard to changing the font, spacing, color, screen position or even the reading level of caption text.

⁶ Specifically, the ATSC DTV television signal contains a closed captioning data stream that includes a DTV closed captioning stream and also generally includes an encapsulated NTSC (EIA-608) captioning stream.

EIA-708 would, moreover, impose a significant burden on broadcasters, especially during the DTV transition. For example, a great amount of programming during the DTV transition will be up-converted from analog to digital, and it would be onerous for broadcasters to recaption those programs (which already have EIA-608 captions) in a format with the more extensive features of EIA-708. Broadcasters will also, during the transition period, be transmitting both NTSC and DTV signals over their analog and digital channels. If required to provide the advanced captioning of EIA-708 during the transition period, broadcasters would be forced to create two different captioned works (one with EIA-608 captions for transmission on the analog channel and one with EIA-708 captions for transmission on the digital channel). Forcing broadcasters to provide both types of captioning would clearly be burdensome, especially for smaller broadcasters trying to provide captions for local live programs such as news. For these reasons, broadcasters should not be obligated to provide captions with any of the advanced display features of EIA-708, at least during the DTV transition.⁷

NAB fully expects, however, that many broadcasters, particularly those with greater resources, will want to provide captioning with the extensive capabilities of EIA-708, once the necessary equipment becomes generally available. In addition, the number of broadcasters providing captions with the advanced features of EIA-708 should increase over time as broadcasters gain more experience with DTV generally and with digital closed captioning specifically. Given that the Commission's rules already require the captioning of very extensive amounts of video programming (both analog and digital) in accordance with a strict schedule,⁸

⁷ Even after the transition to DTV has been completed, NAB asserts that broadcasters should not be required to recaption existing programs that already contain EIA-608 captions in order to provide EIA-708 captioning features. Mandating that the same programming be captioned twice clearly constitutes an undue burden on broadcasters.

⁸ See *Report and Order* in MM Docket No. 95-176, 13 FCC Rcd 3272 (1997), *recon. granted in part, Order on Reconsideration*, 13 FCC Rcd 19973 (1998).

NAB believes that further requiring these captions to have EIA-708 display features would unnecessarily burden broadcasters, particularly during the DTV transition.

II. For The Digital Closed Captioning System To Function Properly, DTV Receivers Must Meet Certain Technical Standards.

A. Especially During the DTV Transition Period, DTV Receivers and Set-Top Converter Boxes Must Be Able to Utilize Analog Caption Data Properly.

The *Notice* (at ¶ 11) sought comment on how so-called “dual mode” receivers should perform when receiving and displaying NTSC signals broadcast from an analog television station. NAB concurs with the Commission’s proposal that DTV receivers should, in accordance with the Commission’s existing rules,⁹ use the EIA-608 data embedded in the NTSC signal to generate the closed captions when the DTV receiver is operating in the analog mode (*i.e.*, when receiving and displaying NTSC broadcasts).¹⁰ We further concur that, while in the digital mode (*i.e.*, when receiving and displaying programs broadcast from a DTV station), DTV receivers should be required to utilize the EIA-708 data to create the caption display. Indeed, even if analog (EIA-608) caption data is present in a DTV program, the data should be ignored by DTV receivers and not used to create captions for display on DTV devices.¹¹

The *Notice* (at ¶ 12) also sought comment on how DTV set-top converter boxes (“STBs”) should perform closed captioning functions.¹² The Commission proposed to require STBs used

⁹ See 47 C.F.R. § 15.199.

¹⁰ This, of course, is the logical choice since no other type of caption data is present in a program broadcast from an NTSC station.

¹¹ One possible exception would be if the DTV program did not contain any EIA-708 caption data or if the EIA-708 data were corrupt and could not be properly decoded. The DTV receiver could then be allowed to look for and decode the EIA-608 data so as to ensure that viewers have access to closed captions.

¹² For purposes of these comments, NAB includes within this category of STBs any DTV receiver or decoder that has an NTSC output.

with analog receivers to *either* decode any analog caption information that is transmitted with the DTV signal, *or* pass this information directly to the analog receiver in a form recognizable by the receiver's built-in caption decoder. NAB believes that this either/or approach is a recipe for disaster, especially during the digital transition period when many consumers will still be using analog television sets.

If DTV equipment manufacturers were allowed to choose the first option (*i.e.*, build a digital STB that would decode the analog captions contained in the DTV signal), then the signal sent from the set-top box's NTSC output to the analog television set would be "open captioned" – that is, the signal would have visible captions overlaid onto the video (and this overlay of captioning could presumably be turned on or off at the viewers' option). When such "open captioned" video is recorded on a VCR, then the visible captions would be permanently burned into the recorded video. If, however, a program is recorded without these open captions, then the recorded program could never be viewed with captioning again. In such cases, the captions would be lost forever because, as the digital STB failed to pass through the analog caption information to the analog receiver, the recorded video would not contain any actual caption data in the VBI.

NAB believes that this result is contrary to the spirit and intent of the Television Decoder Circuitry Act of 1990 ("TDCA") and the Commission's implementation of the TCDA in Section 15.119 of its rules. Since the inception of captioning, consumers have come to expect that the closed captions on a recorded program could be viewed when the program is played back on a VCR.¹³ In addition to a large installed base of consumer equipment containing built-in analog caption decoders, much existing equipment also takes advantage of other data (such as V-Chip

¹³ Indeed, with the current analog closed captioning system, captions may be viewed when a recorded program is played back, even if the captioning had been turned off (and therefore not visible) when the program was originally recorded.

information) sent along with analog captions. If digital STBs do not properly encode with EIA-608 data the NTSC output sent to analog receivers, then many existing home electronic devices will not function as intended. As a result, capabilities currently available to consumers will be lost and considerable consumer confusion will be engendered. NAB therefore urges the Commission to require digital STBs to pass through, unaltered, all of the EIA-608 data contained in DTV programs to the devices (*e.g.*, television sets and VCRs) connected to the analog output of the STBs.¹⁴ NAB does not object if manufacturers offer to consumers STBs that also provide an open caption signal on their NTSC output, but all STBs must, at a minimum, properly encode that output with EIA-608 caption data.¹⁵

B. DTV Receivers Should Receive and Process PSIP.

Along with video and audio, one of the data streams carried in the ATSC DTV broadcast signal is the Program and System Information Protocol (“PSIP”).¹⁶ In essence, the data contained in PSIP tells a receiver what it needs to know about the DTV transport stream. For example, PSIP contains information about the name and length of a program, the program’s rating (*i.e.*, V-Chip information), and the captions on the program. Specifically, PSIP data will

¹⁴ In any instance, however, where no EIA-608 data is present in the DTV signal, NAB believes that digital STBs should construct the relevant caption information from the Program and System Information Protocol (“PSIP”) data stream, and properly encode it into the VBI of the video on the set-top boxes’ NTSC output. As discussed in detail below, PSIP is a data stream containing program captioning and rating information that is carried in the DTV signal.

¹⁵ NAB takes no position on how digital STBs should encode the output intended for DTV receivers. Our comments here are limited only to the NTSC output of digital STBs or any other DTV receiver/decoder device that has an output intended to connect to any NTSC device.

¹⁶ PSIP is defined in three documents. See ATSC Document A/65 (23 Dec. 1997), *Program and System Information Protocol for Terrestrial Broadcast and Cable*; ATSC Document A/66, *Technical Corrigendum No. 1 to ATSC Standard Program and System Information Protocol for Terrestrial Broadcast and Cable, Doc. A/65 (23 Dec. 1997)*; ATSC Document A/67, *Amendment No. 1 to ATSC Standard Program and System Information Protocol for Terrestrial Broadcast and Cable, Doc. A/65 (23 Dec. 1997)*.

tell a DTV receiver if a program is captioned or not and, if it is, the number and type of caption services provided (*e.g.*, “easy reader” captions or captions in other languages in addition to English).¹⁷ The proper functioning of the DTV captioning system depends upon DTV receivers being able to receive and process the data contained in PSIP. NAB therefore believes that the Commission should require broadcasters to transmit and DTV receivers to process PSIP in accordance with ATSC standards. Such a requirement will ensure that digital captioning works as intended, and that consumers have consistent access to all the caption services (such as foreign language captions) that may be associated with programming.¹⁸

C. The Commission Should Not Allow DTV Receivers to Use Non-PSIP Data to Perform V-Chip Functions.

As noted by the Commission (*see Notice* at ¶ 11) and discussed in Section I. above, EIA-708 provides for, *inter alia*, the inclusion of NTSC (EIA-608) closed caption data. EIA-708 included this provision so that, when a DTV set-top box or receiver converts a DTV program to NTSC, the EIA-608 caption data would be present and could be passed to the NTSC receiver in a form recognizable by the analog receiver’s built-in caption decoder. Due to EIA-708’s inclusion of NTSC closed caption data, certain information (specifically, program rating or V-Chip information) carried in the PSIP data stream within the DTV signal may, on occasion, be duplicated within the closed captioning data also carried in the DTV signal.

Currently the Commission requires that the rating of any program broadcast on an analog television station be carried within the existing closed caption system. A program’s rating information is conveyed to an analog television receiver using a technology called Extended

¹⁷ PSIP also tells a DTV receiver about the ratings and types of caption services available for programs scheduled during at least the next 12 hours.

¹⁸ For much the same reasons, cable systems and other multi-channel video distributors should be required to transmit PSIP data as part of their carriage of DTV signals. *See* Comments of NAB in CS Docket No. 98-120 (filed Oct. 13, 1998) at 47 and Appendix G.

Data Service (“XDS”).¹⁹ Because the EIA-708 data stream can contain XDS information (which would be embedded in the EIA-608 caption data), a program broadcast by a DTV station could contain ratings information in two places – in PSIP and in the EIA-708 caption system. As a result, a DTV receiver would have a choice to perform V-Chip program blocking functions based on either the program rating contained in PSIP or on that rating contained in the EIA-608 caption data within the DTV captioning system.²⁰

NAB emphasizes that the EIA-608 caption data was included in the DTV captioning system only as a method to preserve properly formatted EIA-608 closed captions for output from DTV set-top boxes or receivers to analog televisions and VCRs. This inclusion of EIA-608 data was not intended to provide an alternative method for the performance of program blocking functions. NAB is concerned, however, that equipment manufacturers may take the less expensive approach and design digital receivers that rely on the XDS data often included in EIA-608 information, rather than on PSIP data, to perform V-Chip functions. And because XDS data may or may not be present in all EIA-608 data contained in DTV programs, a DTV set that relies on XDS may operate in an erratic manner, thereby causing consumer confusion about the television parental guidelines system. To ensure that parental program blocking works as intended, NAB believes that the Commission should preclude DTV receivers from using XDS data to perform program blocking functions, and should require DTV receivers to comply with ATSC standards and utilize only the ratings information contained in PSIP.

¹⁹ XDS data is interleaved with closed caption data and is included in the EIA-608 information encoded on line 21 of the VBI of an NTSC television signal.

²⁰ During the digital transition period, this situation presented by duplicated rating information may be quite common, because many of the programs broadcast by DTV stations will originally have been produced for analog broadcast and will likely contain XDS data. On the other hand, programs originally produced for broadcast on DTV stations (*i.e.*, high definition television programs) may not contain XDS information.

III. The Commission Must Allow A Reasonable Period Of Time Before The Digital Captioning Rules Become Effective.

The Commission proposed that the digital closed captioning rules become effective one year after adoption. *See Notice* at ¶ 14. Given the very recent adoption of certain industry standards, the continuing process of gaining acceptance for the standards, and the need to construct equipment consistent with these standards, NAB believes the proposed one-year period is unrealistic.

On August 12, 1999, EIA adopted EIA-708-B, Digital Television Closed Captioning.²¹ Section 11 of EIA-708-B includes a method for the transport of caption data throughout the DTV program production and distribution chain. This method involves the creation of “caption distribution packets,” but, as yet, NAB is not aware of any manufacturer that produces equipment accommodating these packets.²² Moreover, this method has not been uniformly accepted by the broadcast industry, and some broadcasters have requested the Society of Motion Picture and Television Engineers (“SMPTE”) to develop an alternative. SMPTE has not, however, completed its work on a standards document setting forth how various types of caption equipment will interface with other DTV equipment. Thus, no agreed upon method currently exists to support the transport of caption data throughout the DTV program production and distribution chain.²³ NAB accordingly believes that one year is not sufficient time for these

²¹ In attempting to implement the provisions of EIA-708-A, captioning equipment manufacturers found that additional work was needed to resolve certain technical issues. In response to these concerns, EIA developed EIA-708-B.

²² “Caption distribution packets” are self-contained data streams that contain captioning data and time codes, and allow captions, pictures and sound to remain properly synchronized throughout the program production and distribution chain. This synchronization of captions with pictures and sound presents particular challenges when programming in the digital environment is compressed.

conflicts to be harmonized, for final standards to be approved, and for equipment manufacturers to design and produce equipment consistent with these standards.

NAB also wants to emphasize the lack of experience by both equipment manufacturers and broadcasters with DTV generally and with digital closed captioning specifically. By contrast, the standards adopted by the Commission for the display of closed captions on analog television receivers were based on more than 20 years experience with closed captioning in the analog environment.²⁴ NAB therefore believes it would not be unreasonable for the Commission to provide a period longer than one year before the digital closed captioning rules are effective, so that both manufacturers and broadcasters can gain vital “real world” experience with digital closed captioning. Above all, manufacturers must be given a realistic time period to design and produce digital equipment that performs captioning functions as reliably as existing analog receivers. If the Commission insists on its unrealistic one-year time frame, the result will likely be a digital closed captioning system primarily notable for its unreliability.

²³ The Commission’s implication in the *Notice* (at ¶ 5) that equipment manufacturers have settled standards approved by all segments of the industry “to use for guidance in designing captioning-capable [DTV] receivers” is simply not correct.

²⁴ See, e.g., *Report* in MM Docket No. 95-176, 11 FCC Rcd 19214, 19223-24 (1996).

IV. Conclusion

The Commission should proceed cautiously when considering any additional technical or programming obligations for broadcasters during their transition to DTV, such as requiring broadcasters to provide the advanced features of EIA-708 captioning. Given the uncertainty surrounding the digital transition generally and the lack of experience with digital closed captioning specifically, the Commission must also provide for a realistic time frame for the implementation of the digital closed captioning rules. The goal of these new rules – to provide a framework for the creation of a reliable and robust digital closed captioning system – will not be achieved by the hurried imposition of ill considered technical rules regarding the display of closed captions and the capabilities of DTV receivers.

Respectfully submitted,

**NATIONAL ASSOCIATION OF
BROADCASTERS**

1771 N Street, N.W.
Washington, DC 20036
(202) 429-5430



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